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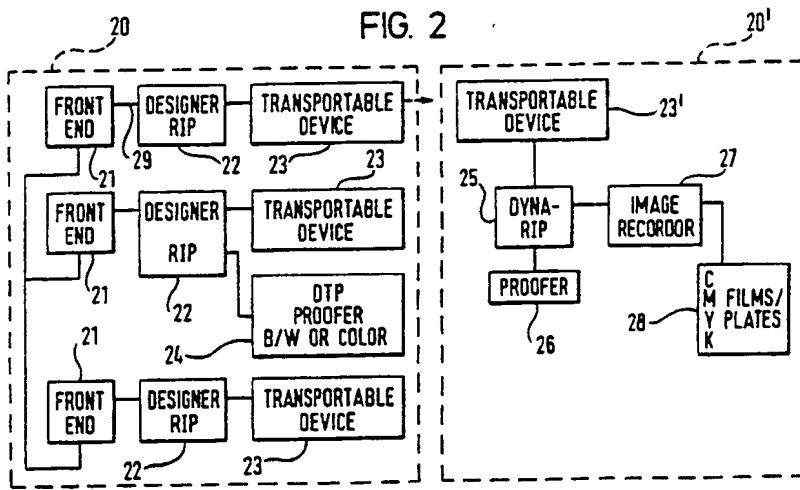
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(54) Designer raster image processor system

(57) A prepress processing system comprises a first station (20) including means (21) to input image data in a first format, a second station (20') remote from the first station (20) including means (28) to produce printing plates or films and data transfer means (23, 23') for transferring printing data between the first station (20) and the second station (20'), wherein the first station (20) includes a raster image processor (22) for converting image data in said first format into a ready-to-plot format for transfer as printing data by the data transfer means (23, 23').

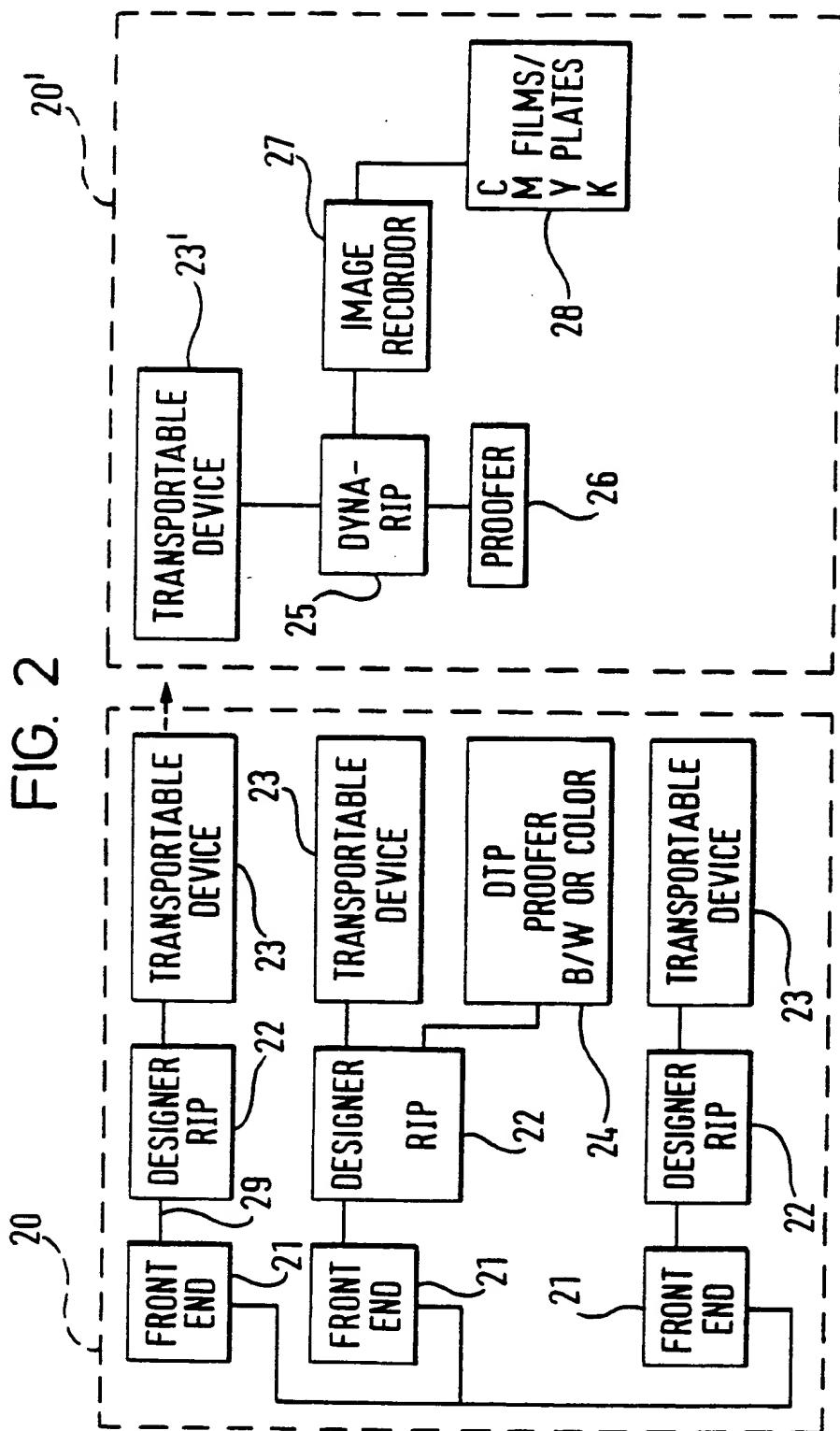
FIG. 2



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

FIG. 2



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BACKGROUND OF THE INVENTION

This invention relates to a system and method for reducing the risk and confusion raised by having front end users and output site as two separate parties.

In prior art techniques, WYSIWYG (what you see is what you get) only exists at the data loops of front ends, and can not be guaranteed when the file or PostScript data is transmitted to a output center. Conventionally, font data is installed on front end system and the rasterizer (RIP) may be from different vendors with the same PostScript Typeface name. It's possible the character shape come out differently.

The other issue is the output ends may not have the typefaces needed installed. Using substituted typefaces always cause output mismatching problem. Users usually don't know whether the data file they sent out for output can be rasterized/imaged successfully at output-ends or not. Output-ends also have no idea the data file they received from their clients can be done or not, sometimes, taking hours to know the job will fail.

U.S. Patent No. 5,047,955, in the title of ELECTRONIC COLLATION by Shope and Godshalk et al. issued on September 10, 1991, discloses an electronic printer receives multi-page documents as character code signals which are applied to a raster image processor for rasterization. The rasterized signals are electronically stored so that a plurality of electronically collated, multi-page sets can be printed without re-rasterization. The present invention, however, is to avoid re-rasterization prior than printing. The present invention further provides a mechanism to let the user adjust re-rasterization, and select suitable line screen for the desire printing quality.

for an all points addressable printer includes at least three digital computer controlled processing units arranged in a parallel processing pipe line. The present invention, in contrast to this patent, does not need the "first unit" as described in this patent to generate rendering commands. The present invention includes a unit similar to the "first unit" to receive printing commands and generate rendering commands. But it is not connected to the "record unit" as described in this patent. The rendered/rasterized data can be carried (through a removable storage device or network or data transmitting method) to a remote to be sent to the "record unit".

SUMMARY OF THE INVENTION

In accordance with a preferred embodiment of the present invention, a flexible new prepress system and method is provided that is capable of making the rasterized and ready-to-plot image data examined and altered before being sent to the image recorder. The system maintains consistent WYSIWYG data layout from front end at user's site to final output. Font data has been rasterized before user's final examination/approval.

The object of the invention is to provide a new prepress system and method to give the front end users total control on final layout (including art work and trapping) through hard copy or soft proofing devices.

The other object of the invention is to provide a new prepress system and method to produce an intermediate transportable file between front end users and output site which guarantee output WYSIWYG through film/plate.

Another object of the invention is to provide a new prepress system and method to let output site maintain control on press related matters like film output linearization, press dot gain control, etc.

different vendors with the same PostScript Typeface name. It's possible the character shape come out differently.

In the prior art techniques as described in Figure 1, RIP's function normally includes three steps: rasterization, trapping and color separation. During the rasterization step, RIP 14 turns geometric into pixel information. This step probably uses different rasterizer than customer's. During the trapping step, RIP 14 alters object shape and color for printing purpose. Users may not like the effect created in this step. During the color separation step, RIP 14 convert any color space to printing ink information and may produce more than 4 inks.

As to the color management relating to the prior art techniques as described in Figure 1, the system will perform the jobs such as film linearization, press gain control, screening and driving the Image recorder. The driver of the image recorder 15 in this system has to be beside and physically linked to the recorder.

Furthermore, according to Figure 1, the output ends 10' may not have the typefaces needed installed. Using substituted typefaces always cause output mismatching problem. Users usually don't know whether the data file they sent out for output can be rasterized/imaged successfully at output-ends 10' or not. Output-ends 10' also have no idea the data file they received from their clients can be done or not, sometimes, taking hours to know the job will fail.

Referring now to Figure 2, there may be seen the Designer RIP system of a preferred embodiment of the present invention showing the Designer RIP process thereof. At each front end 21, a Designer RIP 22 is provided therefor. A transportable device 23 is connected to the Designer RIP 22 and, according to different system requirements, transfers data via network 29 or other available medias to a Dyna-RIP which is attached to a proofer 26 and outputs to the image recorder 27 for outputting films 28.

RIP 22 as desired. It is noted that rasterized data can be sent to recording device 27 with no further processing of page layout data required, i.e. when the data is sent to the recording device, the layout of processed "pages" will never be changed.

Transportable device 23 can be any removable storage device like a removable hard disk or a Magneto Optical Diskette, being connected by a local area network, wide area network, any wireless data communication device or modem. In the case of using a removable hard disk, the system need to be installed the removable hard disk base subsystem in both Designer RIP 22 and the transportable device 23. The removable hard disk can be shift from the transportable device 23 to 23'. In the case of using network, the system need to use the same network protocol, say Novell, and the proper network adapter installed in both Designer RIP 22 and transportable device 23. In the case of using other commercial networks, say InterNet, CompuServe, or leased line, the transportable device 23 and 23' can be totally different. For instance, the transportable device 23 can be connected to a host computer which has access to InterNet and the transportable device 23' is using a modem connected to CompuServe which also has access to InterNet.

Link between transportable device 23 and Designer RIP 22 or Link between transportable device 23' and Dyna RIP 25 can be any kind of computer data bus (SCSI, serial, ISA, EISA, PCI, etc.) with proper subscription of the commercial network if necessary.

Dyna RIP 25 can be a Designer RIP 22 or a conventional RIP with access to the transportable device 23' and the ability to queue and/or prioritize the output of those transported data.

Please refer to Figure 3. Figure 3 depicts a block diagram showing functional links of the user's front end site's of the preferred embodiment of Figure 2. The present invention as described in Figures 2 and 3 spins off part of RIP's function to

WHAT IS CLAIMED IS:

1. A prepress RIP system, comprising:
means for inputting a data file and showing figures represented by the data file;
a Designer RIP device attached to each of said means for inputting a data file and showing figure represented by the data file, said Designer RIP device being capable of creating a ready-to-plot format file for the inputted data file with the rasterization and trapping done; and
a transportable device connected to said Designer RIP device, said transportable device receiving the ready-to-plot format file from the Designer RIP system and storing the file for further processing.
2. A prepress RIP system as claimed in claim 1, further comprising a proofing device for outputting the ready-to-plot format file for examination.
3. A prepress RIP system as claimed in claim 1, further comprising a RIP device attached to said transportable device, and further comprising an image recorder device attached to said RIP device for outputting the ready-to-plot file.
4. A prepress RIP system as claimed in claim 3, wherein the RIP device attached to said transportable device and said image recorder further comprises a proofing device for outputting the ready-to-plot format file for examination.
5. A prepress RIP system, comprising:
means for inputting a data file and showing figures represented by the data file;
a Designer RIP device attached to each of said means for inputting a data file and showing figure represented by the data file, said Designer RIP device being capable of creating a ready-to-plot format file for the inputted data file with the rasterization and trapping done; and

file stored for further processing is further rasterized at a RIP device and then transmitted to an image recorder for outputting.

12. A method for controlling rasterization at front-end devices as claimed in claim 11, wherein the step of being further rasterized at a RIP device comprising the step of proofing the ready-to-plot file for examination.

13. A method for controlling rasterization at front-end devices, comprising:

inputting a data file representing a specific figure from a front-end device;

creating a ready-to-plot format file for the inputted data file with the rasterization and trapping done; and

transmitting the ready-to-plot format file for further processing.

14. A method for controlling rasterization at front-end devices as claimed in claim 13, wherein the step of creating a ready-to-plot format file comprising the step of proofing the ready-to-plot file for examination.

15. A method for controlling rasterization at front-end devices as claimed in claim 13, wherein the ready-to-plot format file transmitted for further processing is further rasterized at a RIP device and then transmitted to an image recorder for outputting.

16. A method for controlling rasterization at front-end devices as claimed in claim 15, wherein the step of being further rasterized at a RIP device comprising the step of proofing the ready-to-plot file for examination.

Relevant Technical Fields

(i) UK CI (Ed.N) H4F (FCL, FCP, FCQ); H4T (TBAX, TBBD, TBBN, TBBX, TDA, TDCCD, TDCX, TDXX)

(ii) Int CI (Ed.6) G06F, G06K

Search Examiner
R F KINGDate of completion of Search
19 OCTOBER 1994

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) WPI

Documents considered relevant
following a search in respect of
Claims :-
1 TO 21

Categories of documents

X: Document indicating lack of novelty or of inventive step.

P: Document published on or after the declared priority date but before the filing date of the present application.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

A: Document indicating technological background and/or state of the art.

&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
X	EP 0494676 A2 (OKI ELECTRIC) - see whole document	1, 5, 9, 13

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

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